

REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

(Received at London Office)

15 JAN 1955

Date of writing Report 26. 11. 54 When handed in at Local Office 27. 11. 54 Port of HAMBURG
 No in g. Book. Survey held at HAMBURG Date. First Survey 14. 10. 54 Last Survey 24. 11. 54
 (No. of Visits 20)

1903 on the Machinery of the Wood, Iron or Steel S.S. "INDIAN ENDEAVOUR"

Gross 7306 Vessel built at Sunderland By whom Short Bros. Ltd. When 1945 8
 Net 5113 Engines made at Glasgow By whom Duncan Stewart & Co. Ltd. When 1945
 As Per Rule 510 Boilers, when made (Main) 1945 (Donkey) -
 of Main Boilers 3 SB(Sp)ners India S.S. Co. Ltd. Owners' Address -
 " " 7248 Port Calcutta Voyage -
 of Donkey Boilers - Managers -
 Pressure - If Surveyed Afloat or in Dry Dock both Particulars of Classification (which must be inserted
 Main Boilers 220 lb (State name of Dock) Hawaldtswerke AG, Hamburg. precisely as in Register Book & Supplements).
 Donkey Boilers -

Report No. Port
 Particulars of Examination and Repairs (if any) TS, LMC, of fuel, Repairs
 Periodical surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the nature and extent of examinations and subsequent repairs. Repairs on the basis of damage (the cause of which must be stated) should be separated from repairs due to other causes; and besides the details in the body of the report, should be briefly summarised at the end of the report. State also the dates and details of any letters respecting this case.

In cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined no damage

A damage report made by anyone else? If so, by whom? -

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? yes

Did the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? -

What parts of the Boilers could not be thus thoroughly examined? -

Special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler? -

Latest date of internal examination of each boiler 8. 11. 54

Did the Surveyor examine the Safety Valves of the Main Boilers? yes To what pressure were they afterwards adjusted under steam? -

Did the Surveyor examine the Safety Valves of the Donkey Boilers? - To what pressure were they afterwards adjusted under steam? -

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? yes and of the Donkey Boilers? -

Did the Surveyor examine the drain plugs of the Main Boilers? - and of the Donkey Boilers? -

Did the Surveyor examine the mountings of the Main Boilers? yes and of the Donkey Boilers? -

Has the screw shaft now been drawn and examined? yes Has it a continuous liner? yes Is an approved oil retaining appliance fitted at the after end? no

Has the shaft now been changed? no If so, state reasons - Has the shaft now fitted been previously used? - Has it a continuous liner? -

Is an approved oil retaining appliance fitted at the after end? - State date of examination of Screw Shaft 1. 11. 54 State the wear down in the

Is electric light and/or power fitted? yes If so, did the Surveyor examine the generators, motors, switchgear cables and fuses? yes

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? yes

Parts, when referred to by numbers, should be counted from forward. Auxiliary machinery should be referred to by position in Machinery Space.

Survey is not complete, state what arrangements have been made for its completion and what remains to be done Complete

On Donkey -

Decking + TS:- Vessel placed in drydock. Propeller, screw shaft, stern bush, cocks, valves and outside fastenings of sea connections opened up, examined, and found or placed in a satisfactory condition.

Machinery:- The following machinery parts opened up, examined, and found or placed in a satisfactory condition:-
 Main engine, all cylinders, pistons, valves, valve casings, piston rods and valve spindles, crossheads, guides and connecting rods with top and bottom end bearings, crank, thrust, and intermediate shafts with their bearings.
 All main engine attached pumps.
 Holding down bolts tested.
 Both generator steam engines over all parts.
 Both independent feed water pumps

General Observations, Opinion, and Recommendation:-

(State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, etc.)

Machinery of this vessel, as now seen, is in efficient condition and eligible in my opinion, to remain as classed, with fresh record of + LMC 11.54, sps 11.54, and TS 11.54, subject to forward pump water end being renewed before the end of March 1955, but without special condition "Breast stay in port (1 of port boiler etc)" "Repairs to water gauge column of starb. blr." and "Main condenser water end and fore door etc"

Fee (per Section 23) £46 5 0 A/c rendered from 14/55
 Fees applied for 19
 Damage - Repair Fee (if any) £10 0 0
 Oil Fuel consumption £51 0 0
 Other expenses (if chargeable) £10 0 0
 Received by me, 19

Surveyor's Minute THURSDAY 20 JAN 1955 CERTIFICATE WRITTEN 7.2.55

ned + LMC 11.54, Subject
S 11.54 Sps 11.54 Fitted for oil fuel 11.54 + Pressure 150° F

Insert Character of Ship and Machinery precisely as in the Register Book

Is a Certificate required? If so, to be sent to

A. Kahler
 Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation

9. Sea circulating pump with driving engine
 Ballast pump
 General service pump
 Oil fuel transfer pump and both oil fuel pumps with their heaters and filters
 Steering engine, fan engine, and windlass
 Main- and auxiliary condenser, both feed water heaters and evaporator tested.
 Valves, cocks, pipes and strainers of pumping arrangements

Steam pipes: Representative length of main- and auxiliary steam pipes removed and tested to the Rule Requirements.

Electrical Installation: Generators (50 kW), motors, switchboards, cables and fittings of electric installation examined, insulation resistance megger tested and all found or placed in a satisfactory condition.

Boiler Survey: All 3 boilers examined internally and externally with superheaters, mountings, manholes, doors, and their fastenings, and found or placed in a satisfactory condition.
 Safety valves adjusted under steam as noted.
 Oil fuel burning installation examined under working conditions and found satisfactory.
 Fire fighting appliances verified.
 Control rods checked.

Oil fuel conversion:-
 The vessel has now been converted for burning oil fuel. The oil fuel is carried in 14 double bottom tanks and 2 settling tanks.

The Capacity and situation of the tanks:-

Double bottom tank No 1		Frames 121-144.	94, 09 tons
"	2 port	" 95-120	158, 88 "
"	2 starb.	" 95-120	158, 88 "
"	3 port	" 75-95	144, 41 "
"	3 starb.	" 75-95	144, 41 "
"	4 port	" 67-75	58, 57 "
"	4 starb.	" 67-75	58, 57 "
"	7 port	" 31-52	115, 48 "
"	7 starb.	" 31-52	115, 48 "
"	8 port	" 18-31	160, 43 "
"	8 starb.	" 18-31	151, 19 "
Settling tank port		" 54-64	34, 76 "
Settling tank starb.		" 54-64	34, 76 "
Total Capacity: 1445, 91 tons			

The settling tanks are fitted in the tween decks port and starboard and overflow pipes are installed with illuminated observation glasses, leading to the 4 double bottom tanks.
 All tanks are fitted with sounding pipes and the settling tanks with an additional pneumatic indicator.
 The forepeak suction line, leading through the double bottom tanks, has now been removed and led through the holds, in way of bilge lines.
 All ballast lines have been tested, renewed where necessary, and all flanges fitted with oil resisting packings.
 Suction and discharge pipes tested on completion in accordance with the Rule Requirements and found good.
 Steam heating coils in all tanks satisfactorily tested.
 Steam heating coils return led through suitably illuminated observation tank on starboard side of the engine room.
 Oil fuel transfer pump, oil fuel pressure units with filters and heaters, mounted on tubestands, have drip trays, leading the oil to the oily bilges.
 Oily bilges have been separated from the engine room bilge (in boiler room) and suction has been installed in accordance with the Rule Requirements.
 A hand lighting unit has been installed and tested (in the boiler room).
 Control rods, operated from outside the machinery space are capable of shutting off oil fuel supply and the steam supply for oil fuel transfer- and unit pumps, and to stop the fan engine.

No 3570

Quick closing valves are fitted to all boilers.
 There are no dampers in the funnel.
 Steam smothering arrangements under the oil fuel units and under the boilers are capable of being operated from outside the machinery space.
 3 chemical fire extinguishers (each of 10 lbs. capacity) and 2 sand boxes, 0.5 m³ each, have been installed in the boiler room, and one 10 gallons extinguisher.

The oil fuel system was examined during all stages of installing and under working conditions on completion, and found satisfactory.

The pumps and heaters, now installed have been built under Special Survey, Certificate for all items checked, and stamp marks noted:-

Oil fuel transfer pump: Cert. Glasgow C 5336 21.12.53
 Stamp: Lloyd's Test 500/200 lbs R.M.B. 12.53
 Maker: G & J Weir Ltd. Cathcart

2 oil fuel unit pumps: Cert. Glasgow C 2030 A 5.7.53
 Stamp: Lloyd's Test 500/200 lbs R.M.B. 7.53
 Maker: G & J Weir Ltd. Cathcart.

2 Heaters:- Cert. Newcastle Cert. 44600 8.3.54
 Stamp: 27995 A+B Lloyd's Test Stampspan 400 lbs, oil space 600 lbs
 10.12.53 L.W.H.

Note: All double bottom tanks, now carrying oil fuel, can also be used for ballast water, change over boxes are fitted as shown on the approved plan, attached to this report.

Alterations:- Generator steam engines: Both generators and their driving engines have now been removed and replaced by two new engines and generators.
 Date: Steam engines:- The Sunderland Forge and Eng. Co. Ltd. Nos 49202 and 49204
 + Generator: 25 kW NOV. 228 A 600 rpm

Identification marks:- No 49202:- Armature:- LR 4428 AG 16.6.53, Shell SDB 21.8.53 Shd 461
 Crankshaft:- LR 150V KF 27.5.53
 Cylinder:- LR 326 CB 5.6.53
 No. 49204:- Armature:- LR 4501 AG 16.6.53, Shell SDB 29.8.53 Shd 462
 Crankshaft:- LR 1764 AG 16.7.53
 Cylinder:- LR 327 CB 5.6.53

The switchboard has been fitted with new knife switches and fuses (200 Amps at 110V request) and new cables have been installed, connecting the generators 1 of 120 mm² and 1 of 50 mm² per pole (274 Amp).

The generators are not running in parallel.

Satisfactory running and governor trials have been carried out on completion.

Additional Fire pump:- A new motor driven fire extinguishing pump has been installed in a separate compartment aft and a new 4" sea suction for this pump in the funnel recess aft.
 Diesel: Pelter, England, Type AVA2, No 3302115, 10 BHP
 Pump: Megator, Type T 100/ AVA2 1500 rpm
 No. 11428

Radar: A radar installation has been installed and the transceiver placed in the bridge house, connected to the bridge house distribution board.

Fans: 2 air fans have been installed for ventilating the boiler room with switches to stop the fans from outside the machinery compartment.

Wear and Tear repairs:- Stern bush: lower half renewed.

Main engine: The main engine has been completely dismantled, the crankshaft lifted and re-aligned. All lower halves of main bearings re-machined.

HP- and MP- crank bearings and HP guide shoe re-machined (broken metal)

Main Condenser:- All condenser tubes renewed, water box and both condenser doors renewed (see SRB.)

Sea circulating pump:- Impeller shaft smoothed in the lathe and bearings renewed.

Impeller and casing machined in way of sealing rings and these renewed (worn)

General Service pump:- Water end re-bored and bucket renewed. Valve gear re-bushed.

Special Reasons List:- "Breast stay in port CC of port B to be renewed at SS"

The breast stay has been carefully examined and found in order, whilst the port breast stay of centre comb. chamber was found broken off in the comb chamber and caulked over. This stay has now been renewed.

It is recommended, the above item may be deleted from the SRlist.

"Repairs to water gauge column of starb. boiler to be re-ord by 3.54"

This water gauge column has now been renewed and it is recommended, this item may be deleted from the SRlist.

"Main condenser water end and forw. door to be renewed by 9.54"

The water box and both doors have now been renewed and it is recommended, this item may be deleted from the SRlist.

Forward feed water pump. The water end of the forward feed water pump was found temporarily repaired with a cement box. It was stated by the Owners Representative, that a new water end had been ordered in the UK. The water end has been examined in place and tested and found acceptable for use as a stand-by pump during the present voyage. It is recommended, an item being inserted in the SR-list "Forward feed pump water end being renewed before the end of March 1955."

Trials: Main- and auxiliary engines, steering engine and windlass, examined under working conditions on completion and found satisfactory.

J. H. H. H.